REMARKS/ARGUMENTS

This is a full and timely response to the Advisory Action dated May 19, 2003 (Paper No. 10), and final Office Action dated March 7, 2003. Reexamination and reconsideration are courteously requested.

By way of the current amendment, claims 1 and 5 are amended, and claim 6 is canceled. Thus, claims 1 to 5 and 7 to 11 are currently pending for the Examiner's consideration.

The amendment to claim 1 is supported by canceled claim 6, and the text at page 10, lines 25 and 33. The amendment to claim 5 is supported by the fact that the lower limit of 14 GPa is the total of two lower limit values in part (6) of claim 1. Thus, the amendment does not raise new issues for the Examiner's consideration, reduces the number of claims before the Examiner, and does not raise issues of new matter. The amendment also overcomes the rejections of the claims for the reasons set forth below.

In the May 19, 2003 Advisory Action, the Examiner did not enter the Amendment filed May 7, 2003, allegedly because "the claims are now directed to an embodiment not previously claimed." No explanation was given regarding what the alleged new embodiment is. Applicants had stated clearly in the May 7, 2003 Amendment that "the amendment does not raise new issues for the Examiner's consideration." In fact, the amendment to claim 1 placed some of the elements of claims 5 and 6. This too was clearly stated in the Remarks portion of the Amendment. Accordingly, there are no new issues or embodiments presented in the claims, and the reasons given in the Advisory Action were, accordingly, erroneous. Applicants filing of the accompanying RCE is to advance prosecution, and Applicants request that the Examiner consider all arguments presented in this Amendment

Rejections Under 35 U.S.C. §102 and 103

In the Office Action, the Examiner rejected claims 1 to 3, 5 to 9, and 11 under 35 U.S.C. § 102(a) as being anticipated by, or under 35 U.S.C. § 103(a) as being unpatentable over JP 11-144227 ("Masafumi"). The rejections are respectfully traversed, for at least the reasons set forth

in the response to the September 26, 2002 Office Action, which are incorporated by reference.

Claim 1 recites a biaxially oriented polyester film for magnetic recording media, which has (1) a dimensional change in a direction perpendicular to a load application direction on the film plane of 0.40 % or less when the film is treated at 49°C and 90 %RH under a load of 2.7 kg per 1 mm^2 of unit sectional area in a thickness direction of the film for 72 hours, (2) a crystallinity of 27 to 45 %, (3) a temperature expansion coefficient αt in a direction perpendicular to the above load application direction on the film plane of -5×10^{-6} to $+20 \times 10^{-6}$/°C and a humidity expansion coefficient αh in a direction perpendicular to the above load application direction on the film plane of $+5 \times 10^{-6}$ to $+20 \times 10^{-6}$/%RH, the value of $(\alpha t + 2\alpha h)$ being $+45 \times 10^{-6}$ or less, (4) a heat shrinkage factor in a direction perpendicular to the above load application direction on the film plane of 0 to 0.7 %, (5) a thickness of 3 to 7 μm, and (6) a Young's modulus in the above load application direction of at least 6 GPa and a Young's modulus in a direction perpendicular to the above load application direction of at least 6 GPa, said Young's modulus in the above load application direction being larger than said Young's modulus in a direction perpendicular to the above load application direction.

Further, claim 1 was narrowed by adding features pertaining to Young's moduli, recited in part (6) of the claim. The Young's moduli are fully supported by the December 9, 2002 Declaration, in Run 1.

Masafumi discloses a biaxially oriented polyethylene-2,6-naphthalene dicarboxylate film for magnetic recording media (see claim 1). The biaxially oriented film is obtained by stretching an unstretched film to 4.0 to 6.0 times in a longitudinal direction at 120 to 150 °C and then 3.0 to 5.0 times in a transverse direction at 140 to 180 °C, optionally further stretching the film to 1.1 to 2.0 times in the longitudinal direction at 130 to 180 °C and to 1.1 to 2.0 times in the transverse direction at 130 to 180 °C again, and then heat setting the biaxially oriented film at 170 to 260 °C for 0.5 to 60 seconds (see paragraphs [0028], [0029]). When the heat setting temperature is raised, the refractive index in a thickness direction of the film can be increased and the heat shrinkage in the crosswise direction of the film can be reduced (see paragraph [0020]).

In example 2, a biaxially oriented film having a thickness of 4.5 μm was obtained by stretching an unstretched film of the polyethylene-2.6-naphthalate having an intrinsic viscosity of 0.63 dl/g and containing 0.02 wt% of monodisperse silica particles having an average particle diameter of 0.1 μm to 5.2 times in a longitudinal direction at 120 °C and then to 4.3 times in a

transverse direction, heat setting the biaxially oriented film at 220 °C for 15 seconds, and relaxing the film by 0.3% through a suspension heat treatment at 110 °C. the heat shrinkage factor in the longitudinal direction of the film after it was treated at 65 °C for 9 days was 0.004.

Masafumi fails to disclose the biaxially oriented film of the present invention. In example 1 of the present specification, the biaxialy oriented film of the presently claimed invention was obtained as a biaxially oriented film having a thickness of 4.5 μm by preheating an unstretched film of plyethylene-2.6-naphthalene dicarboxylate which contained 0.02 wt% of calcium carbonate particles having an average particle diameter of 0.6 μm and 0.2 wt% of silica particles having an average particle diameter of 0.1 μm at 75 °C, stretching it to 5.1 times in a longitudinal direction by heating 14 mm from above with an infrared heater having a surface temperature of 830 °C and then to 4.8 times in a transverse direction at 125 °C, heat setting the biaxially oriented film at 240 °C for 10 seconds and relaxing it by 1.0% in the transverse direction at 120 °C.

When the production conditions of the above example 1 of the present application are compared with the production conditions of the above example 2 of Masafumi, it is clear that there are distinct differences that preclude Masafumi from anticipating the present claims. A Declaration under 37 C.F.R. § 1.132 which discloses experiments that were conducted on the product of example 2 of Masafumi was provided. Values representing the physical properties of claim 1 were measured for the product of example 2 of Masafumi, and the results are shown in Run 2 of the table in the Declaration. As shown in the table, it is clear that the film of example 2 of Masafumi fails to anticipate the properties of claim 1 of the present application, nor are they obvious.

Still further, the Young's moduli are also outside the Young's moduli in a width direction shown in all the Examples of Masafumi, and therefore are not anticipated or obvious. Thus, the rejections based on Masafumi are respectfully requested to be withdrawn. "A claim is anticipated [under 35 U.S.C. § 102] only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987) (emphasis added). See M.P.E.P. § 2131.

Withdrawal of the §102 and §103 rejections of claim 1 are respectfully requested.

Claims 3, 5 to 9, and 11, depending from claim 1, are also allowable for the elements they recite, as well as depending from an allowable base claim. Withdrawal of this rejection is

respectfully requested.

Claims 1 to 3, 5, and 7 to 9 are rejected under 35 U.S.C. § 102(b) as being anticipated by, or under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,665,454 ("Hosoi"). Claims 1 to 2, 4 to 5, 7 to 8, and 10 are also rejected under 35 U.S.C. § 102(b) as being anticipated by, or under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,364,684 ("Sakamoto"). These rejections are respectfully traversed for the reasons stated in the prior response, which are also incorporated by reference, and also in light of the amendment to claim 1 and discussed above regarding Young's moduli. Withdrawal of these rejections is respectfully requested.

Still further, Hosoi discloses a biaxially oriented, unidirectionally long polyethylene-2,6-naphthalate film:

(A) having a Young's modulus of at least 550 kg/mm^2 in the longitudinal direction and a Young's modulus of at least 600 kg/mm2 in the transverse direction, the Young's modulus in the transverse direction being greater than the Young's modulus in the longitudinal direction,

(B) having a heat shrinkage, after heat treatment at 70 °C for 1 hour under no load, of 0.1% or less, and

(C) having a surface roughness, Ra, of 12 nm or less (see col. 3, lines 1 to 11).

The above biaxially oriented film is produced by stretching a polyethylene-2.6-naphthalate unstretched film of 2.5 to 7.0 times in one direction at (Tg - 10) °C to (Tg + 70) °C and to 2.5 to 7.0 times in a direction perpendicular to the above direction at (Tg) °C to (Tg + 70) °C, and heat setting the biaxially oriented film at 190 to 250 °C (see column 10, lines 22 to 45).

In example 1, a 10 μm-thick biaxially oriented film was obtained by stretching a 330 μm-thick unstretched film to 5.0 times in a longitudinal direction at 130 °C and then to 5.0 times in a transverse direction at 135 °C, further stretching the film to 1.3 times in the transverse direction again while heat setting the biaxially oriented film at 200 °C.

From the above discussion of Hosoi, it is clear that Hosoi fails to teach or suggest the requirements (1) to (4) of claim 1 of the present invention. Further, the biaxially oriented film of the present invention and the biaxially oriented film of Hosoi are produced by such different methods that requirement (5) is also not met by Hosoi. In examples 1 to 8 of Hosoi, biaxially oriented films having a thickness of 10 μm (examples 1 to 4) and 8.3 μm (examples 5 to 8) were

obtained. Therefore, these films clearly do not satisfy requirement (5) of the claims of the present invention. In view of the above, it is clear that the biaxially oriented film of the present invention, which produces hardly any track dislocation error due to a dimensional change in the width of a tape, is not anticipated or rendered obvious by Hosoi.

Still further, Sakamoto discloses a biaxially oriented polyethylene-2,6-naphthalate multilayered film which is extruded, stretched in a machine in transverse directions, and heat-treated at a temperature of 160 °C to 240 °C (see col. 1, line 58 to col. 2, line 3).

In example 1, a 5.0 μm-thick PEN multilayered film was obtained by stretching a 130 μm-thick laminated film (amorphous sheet) comprising PEN (A) containing 0.4 wt% of silicon oxide having an average particle diameter of 0.02 μm and PEN (B) containing 0.05 wt% of the above silicon oxide to 5.4 times in a machine direction at 135 °C and to 5.0 times in a transverse direction at 137 °C and heat treating the biaxially oriented film at 230 °C.

As described above, the production conditions of example 1 of Sakamoto are very different from the production conditions of the present invention. The Declaration filed herewith shows experiments performed on the product of example 1 of Sakamoto and the measured values for that product regarding properties (1) to (4) of claim 1 of the present application. These results are shown in Run 3 of the table in the Declaration. From reviewing these data, it is clear that Sakamoto, like the other prior art, also fails to teach or suggest the properties that are claimed in the present claims, and consequently produces products that have track dislocation problems due to changes in tape width. Consequently, it is respectfully requested that the rejections under 35 U.S.C. §§ 102, 103 be withdrawn.

Claims 1 to 11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over JP 59-127730 ("Toray") in view of WO 99 25553 ("Teijin '553"). These rejections are respectfully traversed.

Toray discloses a polyethylene naphthalate film which has (a) an F-5 value of 22 to35 kg/mm^2, (b) a Young's modulus of 650 to 1,100 kg/mm^2, (c) a thermal shrinkage factor (150°C x 1 hour, under no tension) of 2.5 to 3.5 % and is not very anisotropic. Toray relates to a small anisotropic film, and is completely silent with respect to a dimensional change as defined in the

present claims. Therefore, Toray fundamentally differs from the claimed invention of the present invention.

Further, an object of the present invention is to prevent a tape from slipping off of the track when it is made to run repeatedly at a high temperature and a high humidity (see page 1, lines 24 to 34 and page 2, last line to page 3, line 11 of the present specification). This object can be accomplished by the above dimensional change. In contrast, Toray merely teaches that a base film for a magnetic recording medium such as a video tape, but fails to teach or suggest that a problem exists concerning slippage of the tape during storage of data on the tape. For at least these reasons, a person of ordinary skill in the art would not reach the claimed invention by a reading of Toray.

Also, Toray discloses values for αt and αh, but these values alone are not sufficient for a teaching or suggestion of all of the features included in claim 1. To be more particular, Toray discloses in Example 3 that a film has a Young's modulus in a longitudinal direction of 740 kg/mm^2 and a Young's modulus in a transverse direction of 721 kg/mm^2. The Young's modulus in the longitudinal direction of such a film falls below the lower limit value (8 GPa) of the presently claimed invention. All the other Examples of Toray merely mention films having a higher Young's modulus in a longitudinal direction than a Young's modulus in a transverse direction.

Regarding Teijin '553, this reference discloses an adhesive polyester film comprising (a) a biaxially oriented polyester film base layer, and (b) an adhesive layer formed on at least one side of the base layer. Teijin '553 discloses a method of producing the polyester film (a) in paragraph [0023] and teaches that the unstretched film is stretched between 3 and 7 times in a longitudinal direction, and between 3 and 5 times in a transverse direction. However, the biaxially oriented polyester film disclosed in Teijin '553 is obtained by stretching the unstretched film to 3.6 times x 3.8 times (area draw ratio = 13.7) (Examples 1, 2, 3, and 4).

In contrast, the present invention relates to a biaxially oriented polyester film per se, which has no adhesive layer. The biaxially oriented polyester film of the present invention is produced by stretching an unstretched film in the longitudinal and width directions at an area draw ratio of 15 to 35 times as described at page 11, line 25 to page 12, line 12 of the present

specification. Examples of the present invention as disclosed include biaxially oriented films having area draw ratios of about 24.5 (Ex. 1 ad 7), about 21.1 (Ex. and 3) and about 22.6 (Ex. 4, 5, and 6).

As explained above, Teijin '553 relates to a laminate (adhesive polyester film) comprising (a) a biaxially oriented polyester film and (b) an adhesive layer. This does not mean that a polyester film was actually produced under the disclosed conditions of the method for producing the polyester film (a). In other words, even if the production conditions (stretching conditions) of the polyester film (a) disclosed by Teijin '553 overlap with the conditions (stretching conditions) of the production method of the biaxially oriented polyester film of the present invention, it does not follow that the biaxially oriented polyester film of the present invention was actually produced by the teachings and Examples disclosed in Teijin '553. Rather, the polyester film (a) which is confirmed to have been produced in Teijin '553 is merely a film having a smaller area draw ratio (13.7) than the area draw ratio (15 to 35) for producing the biaxially oriented polyester film of the present invention. When the 4.5 μm thick biaxially oriented films obtained in Example 1 and Example 2 of Teijin '553 were measured for their dimensional changes (αw) defined in the present invention, they were 0.65 % and 0.43 %, which are clearly larger than the upper limit specified by the present claims.

The dimensional change in Teijin '553 as defined in paragraph [0065] is an entirely different parameter than that of the above discussed dimensional change defined in the present application and claims. Thus, Teijin '553 fails to disclose, teach or suggest a film which satisfies part (6) of claim 1 in the present application. Consequently, Teijin '553 fails to compensate for the deficient teachings of Toray.

Further, Teijin '553 is directed to a thermosensitive image transfer recording material, which differs from the present invention which is directed to the technical field of magnetic recording media. The problem of the magnetic recording media, which the present invention overcomes, is film slippage from its track when it is made to run repeatedly at a high temperature and at high humidity. Since Teijin '553 fails to suggest an application of its teachings in the field of the present invention, a person of ordinary skill in the art would not be motivated to reach the present invention when reading Teijin '553 alone or together with Toray.

Finally, claims 3 to 7, and 9 to 11 are further rejected as being unpatentable over Toray and Teijin '553 in further view of EP 0893249 ("Teijin '249"). These rejections are respectfully traversed for the reasons set forth above, and for the following reasons.

Teijin '249 teaches that particles are contained in a film, and discloses surface characteristics of the film obtained due to the existence of the particles. However, Teijin '249 fails to teach or suggest that a problem exists or is overcome regarding slippage of a tape from its track. This is because a linear tracking recording system having extremely high recording density for data storage introduce the problem. Teijin '249 also fails to make mention of such factors as αw and dimensional stability. Most importantly, the films disclosed by Teijin '249 have a higher Young's modulus in a transverse direction than in a longitudinal direction. Thus, claims 3 to 7, and 9 to 11 are not obvious in view of Toray and the Teijin references, and it is respectfully requested that these rejections be withdrawn.

CONCLUSION

For the foregoing reasons, claims 1-5 and 7-11 are in condition for allowance, and that all rejections be withdrawn. Accordingly, favorable reexamination and reconsideration of the application in light of these amendments and remarks is courteously solicited. If the examiner has any comments or suggestions that would place this application in even better form, the Examiner is requested to telephone the undersigned attorney at the number below.

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Respectfully submitted,

By [signature]

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